Update: The Laboratory Response Network for Chemical Threats (LRN-C)

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Agenda

- Describe LRN-C Program Operations
- Explain LRN-C Investments
- Q&A

Overview

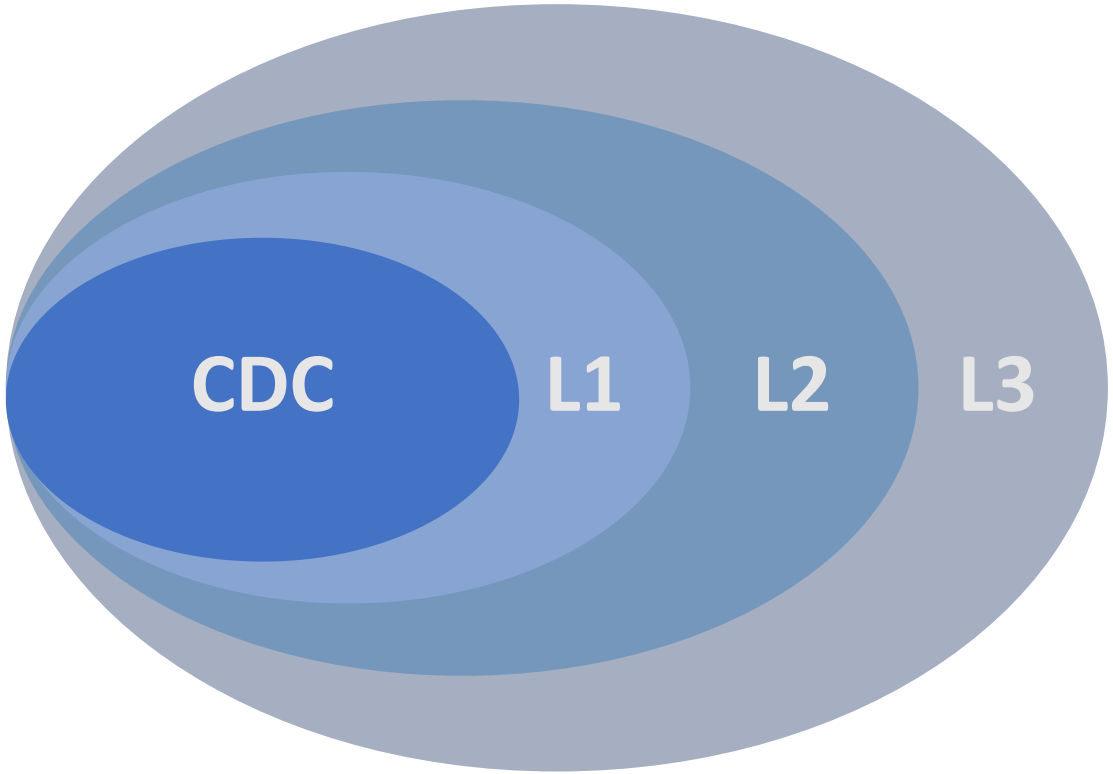
- LRN-C laboratories serve as testing centers in the event of a mass chemical emergency,
- Currently, there are 54 LRN-C laboratories:
  - each of the 50 states
  - three major US cities
  - Puerto Rico
- Each has the capacity to:
  - monitor chemical exposures at their onset,
  - assist first responders and local hospitals with sample triage,
  - pack and ship laboratory materials
  - serve as a CDC back-up facility

LRN-C Level 1 vs. Level 2 vs Level 3 laboratories

- Level 3 LRN-C laboratories ensure local support with sample logistics as well as training and outreach with local hospitals
- Level 2 additionally meet 9 LRN-C core methods using specialized instrumentation
- Level 1 meet all the above plus testing capability for high threat chemical exposures

Surge Capacity Model

LRN-C Laboratory Levels



Level 3 ensures local support with sample logistics, as well as training and outreach with local hospitals.

Level 2 must maintain testing capabilities for exposures to chemical terrorism agents such as cyanide, toxic metals, and toxic industrial chemicals.

Level 1 provide 24/7 assistance to CDC by testing samples in the event of a large-scale chemical emergency. CDC requires these laboratories maintain testing capabilities for exposures to the following high threat chemical agents: mustard agents, nerve agents, and toxic industrial chemicals.

LRN-C By the Numbers

54

LRN-C member laboratories located in the U.S., including one U.S. territory

44

laboratories can identify exposures to toxic chemical agents such as cyanide, nerve agents, and toxic metals

10

laboratories with high threat testing capabilities for mustard and nerve agents, and toxic industrial chemicals exposures

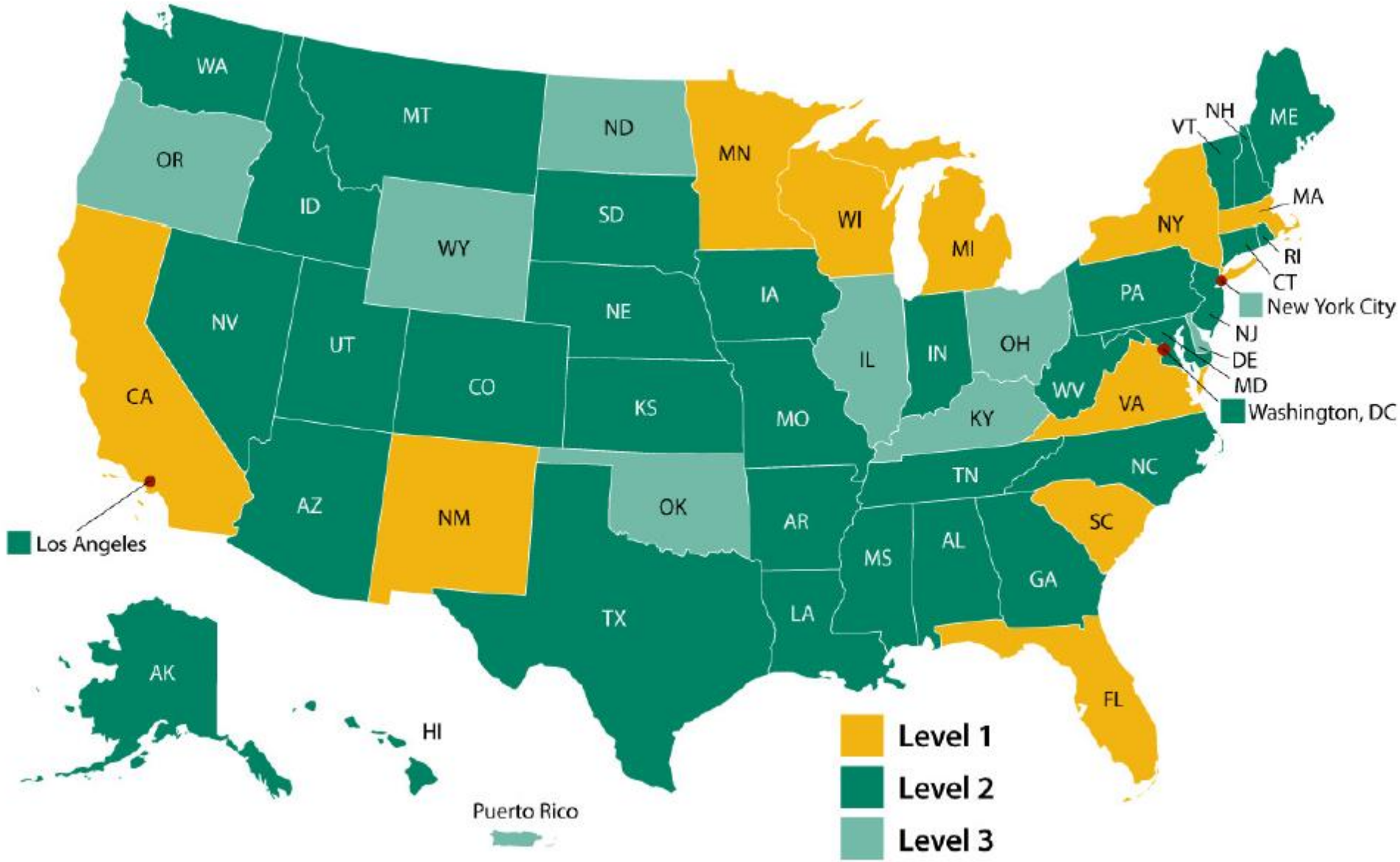
8,500

clinical samples can be processed, tested and reported to CDC within a 24-hour period

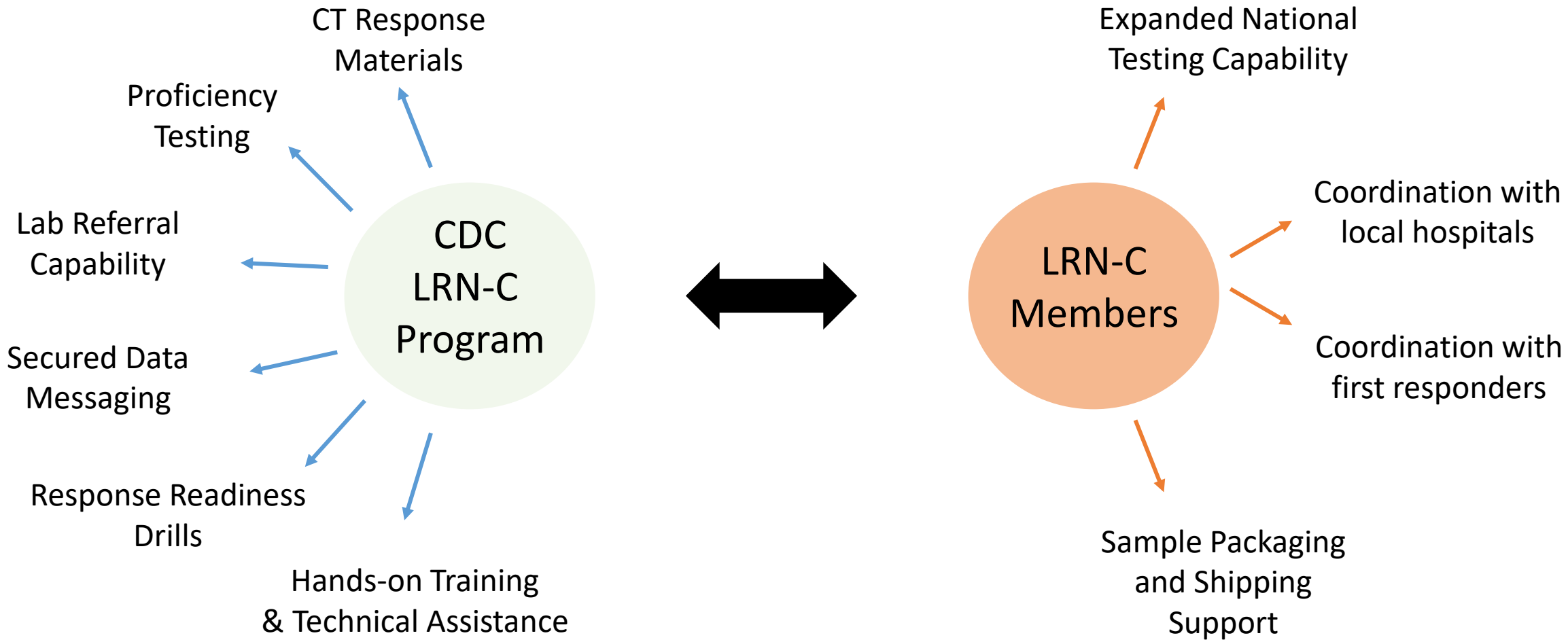
84%

of Americans live within 100 miles of an LRN-C laboratory

LRN-C Member Laboratories



CDC's Support to the LRN-C



Last 5 years of PHEP investments

Year	Level 1	Level 2/Additional	Total
2023	$13,324,520	$7,600,000	$20,924,520
2022	$13,324,820	$5,200,000	$18,524,820
2021	$11,586,800	$0	$11,586,800
2020	$11,586,800	$4,098,600	$15,685,400
2019	$11,586,800	$8,942,400	$20,529,200

- Total funding since 2019 = $87,250,740

LRN-C Emergency Preparedness

Emergency Response Exercises

- **Emergency Response Exercise: Small-scale**
  - Simulates local hospital with small number of victims
  - 10 samples to all labs for given method
  - Annual milestone for CDC and LRN-C (PHEP budget period)
- **Rapid Toxic Screen/Surge Exercises: Large-scale**
  - Simulates large-scale exposure (thousands of victims)
  - CDC runs over 30 different analytical methods to determine the concentration of up to 150 chemical agents within 40 representative samples collected by CERT
  - Hundreds of samples each sent to all level 1 and volunteer level 2 labs
  - Annual milestone for CDC and LRN-C (PHEP budget period)
- **COOP Exercises: Surge Capacity Exercise**
  - LRN-C Level 1 and 2 labs are evaluated on their response and surge capacity
- **Capabilities Exercise**
  - Samples sent to level 3 labs to be referred to selected labs for analysis

Technology Transfer Initiative - $1million/year

- To sustain and maintain the ongoing work of the LRN-C, the PHEP program will fund additional technology transfer support services in 2022 (Budget Period 4)

- The purpose of this funding is to increase LRN-C testing capabilities by the technology transfer of several new and updated LRN-C test methods

- CDC will partner with four LRN-C laboratories to provide technology transfer support for all 54 LRN-C member laboratories.

Four LRN-C laboratories will receive $250,000 each for technology transfer support:

- **Georgia Public Health Laboratory** will evaluate the accuracy and stability of quality control and internal standard lots for the LRN-C Materials Program.
  - This support will ensure that network laboratories continue to have timely access to reagents and materials that are critical to optimal testing performance.
- **Alaska Public Health Laboratory** will update the LRN-C volatile organic compounds in blood (VOC) method to include toxic alcohols.
  - This updated LRN-C method will introduce new capabilities for detecting exposures to toxic alcohols which have been a growing health concern in recent years.
- **New York State Department of Health, Wadsworth Center,** will provide hands-on training and technical assistance support for the LRN-C toxic element screen in urine and mercury in urine methods.
  - This support will ensure network operational readiness to respond to toxic metals exposures in humans.
- **Minnesota Department of Health** will provide method validation support for new high resolution mass spectrometry (HRMS) capabilities and expanded testing capacity for environmental samples to CDC partners upon request.
  - New HRMS and environmental testing capabilities will substantially increase the LRN-C's testing capacity for chemical threat agents.

Thank You!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.